

Message Text

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ACTION SS-25

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SUBJECT: CTB NEGOTIATIONS: NSS WORKING GROUP MEETING,
MAY 23, 1978

CTB MESSAGE NO.218

1. SUMMARY: AT MAY 23 MEETING OF NATIONAL SEISMIC STATIONS (NSS) WORKING GROUP, TARASOV (USSR) ASKED SEVERAL QUESTIONS ABOUT DYNAMIC RANGE OF NSS EQUIPMENT, MOSTLY DEALING WITH MATERIAL DISCUSSED IN PREVIOUS ROUNDS. RYALL (US) EXPLAINED OPERATION OF GAIN RANGING AMPLIFIER TO ACHIEVE 120 DB DYNAMIC RANGE IN NSS EQUIPMENT DESIGN. FINCH (US) COMMENTED ON GENERAL ASPECTS OF TARASOV REMARKS OF MAY 19, AND TURNBULL (US) ASKED FOR CLARIFICATIONS AND REASONS BEHIND SOV DEL PROPOSAL TO ALTER FREQUENCY COVERAGE. TARASOV DEFERRED RESPONSE AND AGAIN PRESSED FOR PROPOSAL ON NUMBERS OF NSS. END SUMMARY.

SECRET

SECRET

PAGE 02 GENEVA 08016 241909Z

2. TARASOV BEGAN MEETING BY ASKING SEVERAL DETAILED QUESTIONS WHICH HE SAID WOULD AID SOV DEL IN DECIDING WHICH PARTS OF US DEL MATERIAL COULD BE DISCUSSED AND AGREED ON. HOW WOULD RESOLUTION BE DETERMINED IN AREAS OF VARYING SEISMIC BACKGROUND NOISE? WAS IT CORRECT THAT A GAIN RANGING SYSTEM WOULD BE USED TO ACHIEVE THE SPECIFIED 120 DB OF DYNAMIC RANGE? HOW MUCH OF THE DYNAMIC RANGE

(I.E., HOW MANY SIGNIFICANT BITS) WOULD BE TAKEN UP BY SEISMIC NOISE ALONE? FINALLY, TARASOV ASKED WHAT MEANS WOULD BE USED TO DIGITIZE ALPHABETIC DATA, APPARENTLY ON THE BASIS OF A MISTAKEN BELIEF THAT SUCH DATA WOULD BE INCLUDED IN THE DATA STREAM.

3. RYALL REPLIED BY EXPLAINING (AS WAS DONE IN PREVIOUS ROUND) HOW GAIN RANGING WAS USED TO ENABLE A DIGITIZER OF 13-BIT RESOLUTION TO COVER A 120 DB DYNAMIC RANGE IN FOUR OVERLAPPING RANGES. SEISMIC BACKGROUND NOISE MIGHT OCCUPY 2 OR 3 BITS OF THIS RANGE AT QUIET SITES AND CORRESPONDINGLY MORE AT NOISY SITES. ON TARASOV'S LAST QUESTION, RYALL NOTED THAT IT WAS INTENDED THAT ALL DATA BE NUMERIC, SO THERE WOULD BE NO NEED TO DIGITIZE ALPHABETIC DATA.

4. FINCH THEN COMMENTED ON TARASOV'S MAY 19 REMARKS ON NSS, SAYING THAT IT WAS ONLY NATURAL THAT US DEL PROPOSED LANGUAGE WOULD REFLECT US THINKING. WE HAD INVITED SOVIET COMMENTS AND SUGGESTIONS ON EQUIPMENT DESIGN, AND WOULD GIVE SERIOUS CONSIDERATION TO ANY CHANGES PROPOSED. WE WOULD ALSO GIVE SERIOUS CONSIDERATION TO SOVIET SUGGESTIONS REGARDING THE US ILLUSTRATIVE TEXT. ON SOVIET REMARK THAT TIMETABLE FOR NSS INSTALLATION WAS BASED ON PRODUCTION SCHEDULE OF US-DESIGNED EQUIPMENT, FINCH INDICATED THAT TARGET DATES REFLECTED OUR VIEW OF REALISTIC SCHEDULE FOR INSTALLING AS WELL AS PRODUCING NSS EQUIPMENT. ON SOV DEL CONCERN ABOUT VOLUME OF INFORMATION FLOW, FINCH INDICATED
SECRET

SECRET

PAGE 03 GENEVA 08016 241909Z

US RECOGNIZED THAT PROVIDING CONTINUOUS DATA WOULD INVOLVE SUBSTANTIAL INFORMATION FLOW, BUT WE HAD CAREFULLY EXAMINED THE PROBLEMS INVOLVED AND CONCLUDED THEY WERE MANAGEABLE. IN RAISING ISSUE, DID SOV DEL HAVE IN MIND POSSIBILITY OF REDUCING VOLUME OF DATA AS IN THEIR PROPOSAL TO DROP THE 10-20 HZ DATA? IN HIS REPLY, TARASOV IGNORED FINCH'S REFERENCE TO CONTINUOUS DATA AND NOTED THAT, IN ANALYZING VOLUME OF INFORMATION TO BE EXCHANGED, US HAD AN ADVANTAGE OVER SOVIETS SINCE US HAD AN IDEA OF NUMBERS OF NSS IT WOULD PROPOSE, WHILE SOVIETS DID NOT.

5. TURNBULL THEN ASKED FOR CLARIFICATION AND RATIONALE BEHIND SOVIET SUGGESTION FOR REDUCED FREQUENCY RANGE OF NSS EQUIPMENT. WE UNDERSTOOD THAT ELIMINATING 10-20 HZ DATA COULD REDUCE THE OVERALL DATA RATE; DID SOV DEL HAVE OTHER REASONS FOR PROPOSING THIS CHANGE? WE DID NOT UNDERSTAND REASONS FOR REDUCING LOW FREQUENCY END OF RANGE; COULD SOV DEL EXPLAIN? IN REGARD TO PROPOSAL THAT FREQUENCY RANGE BE COVERED IN ONLY TWO BANDS RATHER THAN FOUR WE HAD SUGGESTED, COULD SOV DEL DISCUSS THE GENERAL FREQUENCY RESPONSE CHARACTERISTICS THEY HAD IN MIND FOR THOSE BANDS? FINALLY, SOVIET DEL PROPOSAL FOR A MID-

PERIOD BAND WITH WIDENED RESPONSE AT LOW FREQUENCIES WOULD
INCLUDE 8-SECOND MICROSEISMIC NOISE PEAK WITHIN BAND. DID
SOV DEL HAVE A SUGGESTION FOR SHAPING THE RESPONSE OF THIS
BAND TO AVOID THE DEGRADATION IN SENSITIVITY THAT THIS
WOULD APPEAR TO CAUSE? TARASOV DEFERRED RESPONSE TO
QUESTIONS, SAYING SOV DEL WOULD CONSIDER REPLIES AND
PREPARE DRAWINGS TO ILLUSTRATE THEIR ANSWERS. FINCH

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